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In the current debate about the development of language in children, the author agrees with those psycholinguists who emphasize the role of "imitation followed by analogical extension." That is to say, that if there are inborn discovery procedures for the acquisition of language, they are distributional rather than transformational in nature. On the basis of observations of monolingual and bilingual children, the author feels that "the memorization of a fixed linguistic model associated with a constant non-linguistic behavior is at the root of the child's language acquisition." It is, therefore, open to question whether children acquire language by forming rules of a transformational type. The example of language learning ability in brain damaged or retarded children would indicate that language is acquired primarily through imitation, analogy, and substitution processes rather than by rule learning. It follows from this argument that children interpret ambiguous sentences by a process of tentative substitutions to test co-occurrence and distribution restrictions rather than by successively applying two different grammatical rules. It is also felt that it is pointless to construct grammars out of and for children's utterances.(JD)

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SUPRASENTENTIAL AND SUBSTITUTION TESTS
IN FIRST LANGUAGE ACQUISITION

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For any analysis of language, or so I believe
with Uhlenbeck, "the insight of the existence of
linguistic and non-linguistic categories proves to
be essential".¹⁾ Another, and not less essential
element, is the communicative function of language.²⁾
In the investigation of language acquisition in
children a third, and equally important factor, comes
into play. This is the child's maturational curve.
From psychology, we have some knowledge of the child's
cognitive growth. Our data on his linguistic development
are still too limited to reach any conclusive evidence.
Besides, any attempt to discover if all children
acquire language along the same lines of development
is inevitably linked with the question of whether or
not all languages can be acquired in the same way.³⁾

If the first is true and the second is not, how

would a bilingual child procede in acquiring two languages of a basically different type? Does the structure of the language prevail over the way it is acquired, or can one and the same child handle only one mode of acquisition? If the latter is true, then which of the two languages will be the dominant one? Would the dominance be psychologically or linguistically conditioned and can it vary from child to child? How important are sociological considerations?

To posit a first question by asking if all children acquire language in the same manner is an oversimplification. I am pretty much convinced that the cenematic and the plermatic levels are acquired independently of each other⁴⁾ and, without going into finer divisions, these two levels at least ought to be investigated separately.⁵⁾ The simple fact that it is possible, and even common, to speak a foreign language with the wrong pronunciation, even though lexicon and syntax are fully correct, shows that the phonological level is definitely distinct. This does not by itself prove that the various levels also originate separately in the language development of the child. In child language the separation of levels becomes apparent most clearly at the time of the transition from the babbling stage to lallation. Two bilingual children even seemed to be aware of the

separation of levels.6) It is not impossible that we can trace a fairly uniform trend in the phonological development while there might be much greater variation in morphology, lexicon and syntax. The fact that the final result of language acquisition is congruence of exponency does not have to be equated with confusion of levels, neither in the beginning stage nor at final mastery.

The rate of language acquisition depends to a large extent on "functionality",7) i.e. the learner's participation in a communication system. Language development is not "free from the control of detectable stimuli",8) contrary to a recent claim by Noam Chomsky.

It is extremely difficult to understand the linguistic formation of the child; witness the many conflicting theories which have been formed on the subject.

Concerning the psycho-physical make-up of the human infant, except for a very few of the American structuralists in the forties and early fifties, nobody ever questioned that the human faculté de langage is Species-specific. Inborn human aptitudes, of course, are not to be identified with Platonic ideas. Wittgenstein's discussion of an innate language mechanism strikes me as not sufficiently clear.9)

The Chomskian innateness theory in its earliest form,¹⁰⁾ although still favored by McNeill¹¹⁾ and his followers, is untenable because a forgetting device runs counter to all other learning processes.

Currently, the main debate stays within the time hallowed philosophical argument of what is in the "black box."¹²⁾ The latter is either the familiar tabula rasa, a purposely receptive vessel where nil est in intellectu quod non fuerit in sensu¹³⁾, or a more or less extensively pre-structured container of ideas.

The majority of psycholinguists nowadays posit the presence of something like Fodor's "intrinsic"¹⁴⁾ devices of "inference rules"¹⁵⁾ for the "induction of underlying structure".¹⁶⁾ Among this group no agreement has been reached as to the extent of the inborn system, potential or cell-specific as it may be. This problem ultimately ties in with the search for language universals¹⁷⁾, existential as well as typological, pertinent to form and to meaning. Concerning cell-specificities, research on the biochemistry of language learning is still in its beginning stage.¹⁸⁾ Personally, I feel more inclined towards potentialities than "content", because neurologists¹⁹⁾ tell me that it is precisely the smallness and unformedness of the brain of the human

newborn as compared to his animal counterpart that enables us to acquire so much more knowledge and power than animals.²⁰⁾ As Richard Chase puts it, "Plasticity increases the probability that the particular form specificities assume will be compatible with local communication requirements."²¹⁾

With regard to the ways by which the child actually proceeds in his language acquisition, opinions "tend to split along the already familiar lines of cleavage. In the main, sympathies with generative linguistics incline one to prefer to treat with language as produced by a device applying rules to create an utterance. In contrast, psychological models traditionally tend to emphasize the role of learned probabilistically sequenced materials, i.e., materials stored in nearly intact form in memory."²²⁾ Jenkins also calls this appropriately a dichotomy of a "computation" versus a "storage" approach.²³⁾

I count myself in the "storage" camp. I do not believe in underlying structures of the type posited by generative grammar, useful as these concepts prove to be on a purely theoretical level of language analysis. The analysis of how children acquire their native tongue is a much more complex and, I might say, more important, one and ought to be dealt with

realistically and followed up by constant empirical validation. Just to mention one instance where generative grammar and pedolinguistics diverge, the positive statement of the kernel or phrase structure type, is by no means the first sentence type to appear in child language. In fact, the child's first sentence type is the desiderative.

If we look for a chronological sequel of rule formation in first language acquisition, I am afraid we are seeking something that is not there. Grammarians and linguists have discovered important logical relationships in the way human language is construed. Transformationalism, in particular, has uncovered some almost hidden and complex correspondences within the English language. These rules exist, but the child neither knows them nor applies them and does not acquire his language according to them. Generative-transformational rules cover relationships; they have no chronological or psychological sequence. Putting them in an order of acquisition strikes me like looking for the beginning of a circle which has already been drawn; and, then, to draw a circle it does not matter where one starts.

Bill hit John and John was hit by Bill are evidently related, but what remains to be tested is if in speech programming and/or during first language acquisition the passive is produced as a transformation

of the active or as an analogy of another passive. That something like an analogical extension is most likely what actually happens, is supported by a report of Mary Butler, a high school teacher in a rural community in Tennessee and the wife of a student of mine. Mrs. Butler observed some one hundred and fifty students, between the ages of sixteen and seventeen, in five classes of eleventh-grade English. These students, all of whom were normal users of active and passive English sentences, had almost insurmountable difficulties in trying to understand the difference between active and passive voice. "They would call intransitive complete verbs such as 'We are eating' passive verbs." After three or four class periods devoted to the subject of voice, sixty-five to seventy-five per cent of the students were able to grasp the subject. I realize, of course, that unawareness of competence does not disprove competence; but it may at least warrant an investigation of the matter. In my opinion, the passive-active relationship is one step removed or "deepened". The child at the two-word stage who says both Bill hit and John hit for the same event does not furnish any epistemological clue from his overt verbal behavior. Before we can make any statement on what constitutes his competence, we must wait for the psychologists

to provide us with suitable testing devices. For the moment, the most likely hypothesis seems to be the imitation-analogy one, or so I believe.

The development of language in children, in my opinion, essentially proceeds in two steps, imitation followed by analogical extension. In its early stages, a child's understanding of language is as gross and unquantized as his own production.²⁴⁾ "These things are picked up first as wholes and then 'deepened' later."²⁵⁾

A most striking example in support of the theory of imitation was furnished by the one year old son of a colleague of mine at the University of Florence, Italy. The child had one identical overt form, pakka for Italian schiaffo "slap" and scarpa "shoe". The homonymy was eschewed by the child's consistent mimicry of an extremely stern face accompanying the pronunciation of kappa in the meaning of schiaffo, the facial gesture representing that of his father's when administering a slap.²⁶⁾

Several parents have remarked to me about their children talking "televisionese". Actors and advertisers, except for the famous cigarette that tastes good like a cigarette should, do not generally follow rules different from standard English. The process in child language, in this connection, appears to be one of

imitation and analogical extension. These TV-bound children were either repeating entire sentences or forming new ones on the model of those heard over the air. My son, at seven and a half years, would say to me: Hand me over that apple with the tone of a cowboy telling his partner to hand him over that gun. Or he would say There ain't no hurry with my homework when obviously "homework" had not been in the model sentence. He knew very well that the first part of the sentence was not modeled after his parents' speech and he usually produced these grammatical shockers with a grin on his face.

As far as I can make out from all the children I have observed, the memorization of a fixed linguistic model associated with a constant non-linguistic behavior is at the root of the child's language acquisition. By model I do not mean an algebraic one, but plainly a syntagmatic sequence. Children are capable of "understanding the meaning of most of the words and the meaning of the sentence as a whole, but not of understanding the grammatical function of the elements."27)

In contrast to the authors of this statement, I would add that children at the "telegraphic" stage also do not construct grammatical rules. Miller and Ervin go on to say that "It is clear that the grammar of these sentences is not identical with the adult

model,"28) where as to me the child's utterances are merely imperfect imitations with occasional substitutions. To my mind it is still open to question whether children, even though they do not "do so from the very earliest age at which words are combined,"29) inevitably, at a later - but still very early stage - "must and do eventually induce construction rules."30) If children acquired language by forming rules of a transformational or some other type, it could not be explained how it is possible for retardates to be capable of speaking. These children who are unteachable and only trainable are therefore incapable of rule learning. Brain damaged children cannot count but can memorize a long string of numerical sequences if trained to do so. This means to me that their memory is less damaged than their "intelligence", i.e., ability to understand. Positing language acquisition as primarily based on imitation, analogy and substitution makes it possible to explain the acquisition of language by retarded children without the need of resorting to setting up an entirely different learning system for language than for all other aspects of human behavior.

What I would propose, beyond a return to the structuralist notion of substitution and classification, is the reinstatement of the pre-~~structuralist~~ word in its unique importance as an independent unit of grammar. By this I mean with Bolinger: "When we say that the context determines the sense we mean not that it imposes a sense but that it selects one that is already there."³¹) To underpin the theory, besides reporting empirical observations on my son, I shall report the data recorded by Carol Barach,³²) a student of mine, about her three year old boy. The child consistently distinguished his use of nice versus pretty and of love versus like, on a basis of animate (dogs, puppies, tigers, kangaroos, snakes, mama, daddy), versus inanimate (trees, shoes, books, toys exclusive of stuffed animals which were animate). Was this a grammatical category, or is its application to only two items too restricted to warrant calling it such? If it is, did the child "create" this category from the majority of cases where nice and love were associated with persons and animals as distinguished from pretty and like which were more frequently associated not with living beings but with objects? Or is he simply realizing a regular syntagmatic co-occurrence, substituting paradigmatically one

animal or one person for another by virtue of a semantic category he has formed of these groups?

Until about school age, my son was the type of child who never wanted to show his ignorance. Although extremely anxious to find out what he did not know or to understand more exactly what he knew in general, the child avoided direct questions. When uncertain about a language item, my son would consistently - and with obvious awareness of his heuristics - request me to perform some action, like moving a chair. From my behavior he would discern if he had expressed himself correctly. If he had any doubts about being fully correct, he would do one of two things - either use a different sentence with the same word he was testing, or he would keep the sentence constant and substitute the word under scrutiny. He was working with co-occurrence and distribution and his discovery procedure was a substitution test over a suprasentential range of language material, i.e., his paradigmatic system comprised full statements, or, at most, phrases. Within these the child worked syntagmatically.³³⁾

In linguistic theory, this amounts to stating that an ambiguous sentence like "He bought stock for me"³⁴⁾ would not be disambiguated by successively

applying two different grammatical rules. The child would, instead, proceed by tentatively substituting other words or word groups for the troublesome "for". Even though language can be described transformationally with great benefit, I have sincere doubts that it is either acquired or programmed according to P and TG rules. As a final goal, it may very well be true that "Reduction of syntax or semantics to distribution in any serious sense is dead,"³⁵⁾ but as a beginning stage in child language, distribution seems to be in a key position. It is true that "The striking fact about the use of language is the absence of repetition: almost every sentence uttered is uttered for the first time."³⁶⁾ But only if "repetition" stands for the identical rendering of a model sentence. According to my observations, children do not create new sentences; they modify those they have heard before.

If one wants to speak of an algorithm and construct a mathematical model for my son's heuristics, what comes closest to it is the concept of correlativity, where "Within a certain linguistic register, a word that normally has several meanings is narrowed down and defined by its collocation with or proximity to another word, with which it may be said to correlate."³⁷⁾ The importance of "correlativity" becomes apparent

from my son's behavior. The child was raised bilingually in Italian and English. In his earliest speech development there probably was an all-level dominance of Italian. When he was six years old, his Italian had receded to the passive role and a year later virtually all traces of calques had disappeared, like the very early My father makes the beard (Italian: Mio padre si fa la barba), "My father is shaving" and the last calques at seven years He takes company (Italian: Tiene compagnia), "He keeps company"; and Make me company (Italian: Fammi compagnia), "Keep me company" (imperative).

Interestingly, at eight years less three weeks, there suddenly showed up an interference in lexical semantics. The Italian verb sentire embraces both the meaning of English "to smell" and "to hear". To my great astonishment, my son asked me in English to let him hear a certain odor. I recall very well how many "correlativity questions" the child had asked me in Italian during his fourth and fifth year of life, with regard to the verb sentire. Having worked so hard at it, this word, more than many another, acquired by his peculiar learning strategy, must have left in him an overwhelming impression.

The first two-word sentence of my son's occurred at sixteen months and the sequence of words was always identical to the one occupied by these two words in

the adult model. A fixed word order has also been observed by Bellugi,³⁸⁾ Slobin,³⁹⁾ and Carol Barach.⁴⁰⁾ I would not, however, consider the importance of word order in English, Russian, and Italian speaking children as a matter of syntax but, pure and simply, presyntactic, like the one-word sentence. The subject is only a logical subject and does not always correspond to what would be the nominative in adult language, and is not even necessarily a noun. As "words in the [adult] model are often missing from the [child's] imitation but the words preserved are in the order of the original",⁴¹⁾ the subject - or whatever was the first element in the adult sentence - is no longer necessarily expressed and the child's sentence, taken in its overt shape, cannot be considered identical to the favorite clause of the language being acquired. To construct grammars for - i.e., out of - children's utterances may prove a pointless undertaking, the results of which might well be entirely contrived.

If there are inborn discovery procedures for the acquisition of language, I would rather see them on a distributional than on a transformational basis. To quote Householder, "the grammars in his brain" seem to contain "many examples ... linked by a complex network of analogical chains; and if they contain

rules (as they must in some way), most of them are in the form of open analogical chains with general instructions to extend."⁴²⁾

The importance of analogy in language in general appears clearly from historical linguistics. Analogy operates on semantics, syntax, morphology, and phonology. Even neologisms as well as a child's spontaneous creations can be classed with analogical change. Most revealing in this respect is children's disguised speech,⁴³⁾ teenage slang, and the new hippie language.

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